3-27-2015

Two new species, a new country record, and a key to the species of *Aulonothroscus* Horn (Coleoptera: Throscidae) from The Bahamas

Paul J. Johnson
South Dakota State University, paul.johnson@sdstate.edu

INSECTA MUNDI A Journal of World Insect Systematics

0412

Two new species, a new country record, and a key to the species of *Aulonothroscus* Horn (Coleoptera: Throscidae) from The Bahamas

Paul J. Johnson
Insect Biodiversity Lab., Box 2207A
South Dakota State University
Brookings, SD 57007 U.S.A.

Date of Issue: March 27, 2015

CENTER FOR SYSTEMATIC ENTOMOLOGY, INC., Gainesville, FL

Paul J. Johnson
Two new species, a new country record, and a key to the species of *Aulonothroscus* Horn (Coleoptera: Throscidae) from The Bahamas
Insecta Mundi 0412: 1–6

ZooBank Registered: urn:lsid:zoobank.org:pub:16DABC0B-6FFD-4561-BB99-557751C2FB6C

Published in 2015 by
Center for Systematic Entomology, Inc.
P. O. Box 141874
Gainesville, FL 32614-1874 USA
http://centerforsystematicentomology.org/

Insecta Mundi is a journal primarily devoted to insect systematics, but articles can be published on any non-marine arthropod. Topics considered for publication include systematics, taxonomy, nomenclature, checklists, faunal works, and natural history. **Insecta Mundi** will not consider works in the applied sciences (i.e. medical entomology, pest control research, etc.), and no longer publishes book reviews or editorials. Insecta Mundi publishes original research or discoveries in an inexpensive and timely manner, distributing them free via open access on the internet on the date of publication.

Insecta Mundi is referenced or abstracted by several sources including the Zoological Record, CAB Abstracts, etc. **Insecta Mundi** is published irregularly throughout the year, with completed manuscripts assigned an individual number. Manuscripts must be peer reviewed prior to submission, after which they are reviewed by the editorial board to ensure quality. One author of each submitted manuscript must be a current member of the Center for Systematic Entomology.

Manuscript Preparation Guidelines and **Submission Requirements** available on the Insecta Mundi webpage at: http://centerforsystematicentomology.org/insectamundi/

Printed copies (ISSN 0749-6737) annually deposited in libraries:
CSIRO, Canberra, ACT, Australia
Museu de Zoologia, São Paulo, Brazil
Agriculture and Agrifood Canada, Ottawa, ON, Canada
The Natural History Museum, London, UK
Muzeum i Instytut Zoologii PAN, Warsaw, Poland
National Taiwan University, Taipei, Taiwan
California Academy of Sciences, San Francisco, CA, USA
Florida Department of Agriculture and Consumer Services, Gainesville, FL, USA
Field Museum of Natural History, Chicago, IL, USA
National Museum of Natural History, Smithsonian Institution, Washington, DC, USA
Zoological Institute of Russian Academy of Sciences, Saint-Petersburg, Russia

Electronic copies (Online ISSN 1942-1354, CDROM ISSN 1942-1362) in PDF format:
Printed CD or DVD mailed to all members at end of year. Archived digitally by Portico.
Florida Virtual Campus: http://purl.fcla.edu/fcla/insectamundi
University of Nebraska-Lincoln, Digital Commons: http://digitalcommons.unl.edu/insectamundi/
Goethe-Universität, Frankfurt am Main: http://nbn-resolving.de/urn/resolver.pl?urn:nbn:de:hebis:30:3-135240

Layout Editor for this article: Eugenio H. Nearns

INSECTA MUNDI 0412: 1–6 2015

Two new species, a new country record, and a key to the species of *Aulonothroscus* Horn (Coleoptera: Throscidae) from The Bahamas

Paul J. Johnson
Insect Biodiversity Lab., Box 2207A
South Dakota State University
Brookings, SD 57007 U.S.A.
paul.johnson@sdstate.edu

Abstract. Two new species of *Aulonothroscus* Horn are described from The Bahamas and a third species is newly reported. *Aulonothroscus inawa* **new species** is described from Great Inagua and *Aulonothroscus sibateo* **new species** is described from Eleuthera. *Aulonothroscus convergens* (Horn) is reported from Andros, providing an island and **new country record**. These are the first *Aulonothroscus* identified to species from the Lucayan Archipelago and from a West Indies locality other than Guadeloupe. A key to the species of Bahamian *Aulonothroscus* is provided.

Key Words. throscid beetle, new species, new country record, Lucayan Archipelago, Paleoprovidence, West Indies, Caribbean

Introduction

Aulonothroscus Horn (1890) is the largest genus of Throscidae (Coleoptera) with about 95 valid species presently assigned, including those presented below. Horn (1885, 1890) reviewed the species for the United States and Mesoamerica. Blanchard (1917) partially revised the family for Canada and the United States in a posthumous article edited by H.C. Fall, but with an incomplete treatment of *Aulonothroscus*. Majka (2012) reviewed the species of Throscidae for the Canadian Maritime provinces but reported only *Aulonothroscus constrictor* (Say) for the genus. Reports of throscid beetles from The Bahamas are recent (Turnbow and Thomas 2008; Johnson 2014), and are the first from the Lucayan Archipelago. In adjacent and faunally related regions, *Aulonothroscus bicarinatus* Fleutiaux (1911, 1947), from Guadeloupe, is the only previously described *Aulonothroscus* species from the Antilles. The listing by Thomas et al. (2013) of an undetermined *Aulonothroscus* species from the Cayman Islands is the first report of the genus for the Greater Antilles (see e.g., Wolcott 1948; Peck 2005; Perez-Gelabert 2008). Throughout the region these beetles remain poorly sampled and studied.

Schenkling (1928) and Blackwelder (1944) compiled the most recent published catalogs, with both including only *A. bicarinatus* for the West Indies. Turnbow and Thomas (2008) listed two undetermined species of *Aulonothroscus* from Andros, Eleuthera, and Great Inagua islands. These specimens were examined and determined to represent two undescribed species and *A. convergens* (Horn). The reporting here of new species and a new record for *A. convergens* from The Bahamas is complementary to the recently described *Trixagus steineri* Johnson (2014) from New Providence Island.

These new reports confirm a second genus from The Bahamas and the Lucayan Archipelago. Three of the four Bahamian throscid beetles are reported from remnants of the Pleistocene island of Paleoprovidence (Campbell 1978 [originally as “Palaeoprovidence”]; Turnbow and Thomas 2008).

Methods and Materials

Specimens of the new species examined and reported below are from the Florida State Collection of Arthropods (FSCA). The holotype of *A. convergens* (Horn) is at the Museum of Comparative Zoology (MCZ), Harvard University, where it was studied directly and by subsequent reference to online images. Basic measurements were taken with an ocular micrometer at 0.1 and 0.01 mm increments. Fifteen to 25 digital images were made of each specimen, with images stacked using ZereneStacker Version 1.04 Build T201412212230, and the resulting image files edited in PhotoShop CS3. Dissections were made as needed by soaking each specimen in ammonia for 1.0–1.5 hr, removing the abdomen, determining

the sex, and if male extracting the aedeagus. Abdominal ventrites are glued to the specimen point adjacent to the beetle. Dissected genitalia and lightly sclerotized abdominal sclerites are preserved in plastic microvials with a drop of glycerine and attached below each pointed specimen. Label data are presented verbatim. All FSCA specimens were returned.

Taxonomy

Aulonothroscus convergens (Horn)

Throscus convergens Horn 1885: 202
Aulonothroscus convergens, of Horn 1890: 208; Blanchard 1917: 20; Leng 1920: 177; Schenkling 1928: 15; Kirk 1969: 52; Peck and Thomas 1998: 71

Diagnosis. This small (2.4 mm long) species is immediately recognized by the pair of frontal carinae being strong, distant from the eyes, each arcing toward the meson and becoming approximate between the eyes, and then diverging anterolaterally. A ventral incision of each compound eye is broadly triangular and extends approximately to the center of each eye.

Specimens examined. BAHAMAS: Andros Is., Forfar Field Sta., nr Stafford Creek, 22-28-vii-2006, MC Thomas, TRSmith, UV trap in coastal coppice (1, FSCA). The holotype was examined along with high-resolution images (MCZ Type Database 2014).

Notes. This is the "*Aulonothroscus* sp. 1" of Turnbow and Thomas (2008). Horn (1885) described *A. convergens* from Georgia. Blanchard (1917), Leng (1920), and Kirk (1969) listed the species from District of Columbia, Georgia, Florida, Louisiana, North Carolina, New York, South Carolina, and Tennessee. This report of *A. convergens* from The Bahamas provides a **new country record**.

Aulonothroscus inawa new species
(Figures 1–2)

Description. Male. Body (Fig. 1) 2.7–2.8 mm long, 1.3–1.4 mm wide; elongate-ovate, broadest across humeri, shallowly convex, shining, dorsum piceus, venter castaneus, and antennae, palpomeres and tarsi brunneopiceus; pubescence pale cinereus.

Head larger punctures separated 0.2–0.5 times own diameter, interpunctural spaces finely punctured; frontal carinae close to and curving around eyes, diverging around antennal fossae to anterolateral angles of frons. Antenna capitate; antennomere 2 subequal in length to antennomeres 3 and 4 together, and 1.5 times as wide; antennomeres 3–8 short, subcylindrical; antennomeres 9–11 abruptly forming a subserratiform club, densely setose.

Pronotum sparsely, moderately punctured, interpunctural spaces twice puncture diameter, minutely punctured; transverse antescutellar region ill-defined, minutely punctured; antescutellar region with fine median ridge, indistinct paramedial impressions; hind angle dorsal carina fine, subparallel to lateral margin, reaching about 60% of distance to anterior margin. Elytra 3.1 times mesal length of pronotum. Stria 1 finely, shallowly grooved; striae 2–4 of fine to moderate serial punctures; striae 5–8 finely, shallowly grooved; striae 8–9 deeply impressed in basal half, fine apically. Intervals flat minutely, confusedly punctured. Metaventrite finely, sparsely punctured on disc, larger laterally; densely pubescent; transverse tarsal sulcus shallowly arching basally, strongly arcing laterally to lateroposterior angle. Middle and hind tibiae with fringe of long setae along dorsal angle. Tarsomere 3 slightly dilated apically; tarsomere 4 with membranous ventral lobe extending about half-length of tarsomere 5.

Abdominal ventrites finely punctured on disc, coarsely punctured laterally. Aedeagus (Fig. 2) with basal piece 0.55 times total length, two large ventrolateral setae at shoulder, and deeply, narrowly incised basally; median lobe 0.33 times total length, evenly attenuate apically, apex subtruncate, 0.75

times length of lateral lobe; each lateral lobe 0.45 times total length, attenuate, apex slightly incurved, acuminate, ventrally with dense brush of long setae.

Female unknown.

Type Material. HOLOTYPE, male, labeled "BAHAMAS: Great Inagua, Matthew Town, at light, 9 July 2007, R. Turnbow (FSCA).

Paratype: BAHAMAS, Great Inagua, 2-3 mi. N. Salt Pond Hill, 14-vii-2007, blacklight trap, Thomas, Turnbow & Smith (1, FSCA).

Figures 1–4. *Aulonothroscus* species. **1)** *Aulonothroscus inawa* Johnson, new species, adult habitus. **2)** *Aulonothroscus inawa* Johnson, new species, aedeagus, dorsal aspect. **3)** *Aulonothroscus sibateo* Johnson, new species, adult habitus. **4)** *Aulonothroscus sibateo* Johnson, new species, aedeagus, dorsal habitus. Scale bars = 0.5 mm.

Etymology. The species epithet "*inawa*" is a noun in apposition and comes from the Taino term "*i na wa*" for the island of Great Inagua, which translates to "small eastern island" (Granberry 1991; Granberry and Vescelius 2004).

Discussion. This species represents part of the "*Aulonothroscus* sp. 2" specimen series of Turnbow and Thomas (2008). In the species key by Blanchard (1917), *A. inawa* fails to trace through the key due to the combination of entire compound eyes, carinate frons, and long prosternal carinae.

***Aulonothroscus sibateo* new species**
(Figures 3–4)

Description. Male. Similar to *A. inawa*, except: Body (Fig. 3) 3.2–3.3 mm long, 1.5–1.6 mm wide; obovate, broadest subhumerally, shallowly convex, shining, piceus to nigrous, except tarsi brunneopiceus; pubescence cinereus, decumbent, with strial setae suberect.

Head moderately coarsely punctured, interpunctural spaces microreticulate; with a pair of fine subparallel vertical carinae on frons, diverging around antennal fossae to anterolateral angles of frons.

Pronotum 1.9 times wider than long; sparsely, coarsely punctured; interpunctural spaces subequal to puncture diameter, microreticulate; transverse antescutellar region smooth, sparsely micropunctate, extending laterad to elytral stria 3, with fine median ridge separating two rounded shallow paramedial depressions; hind angle dorsal carina subparallel to lateral margin, reaching about 47% of distance to anterior margin. Elytra 2.9 times length of pronotum along meson. Striae finely, shallowly engraved from base to apex; marginal striae deeply impressed in basal half. Intervals confusedly punctured basally, forming moderately punctured single series apically.

Abdominal ventrites coarsely punctured. Aedeagus (Fig. 4) with basal piece 0.60 times total length, deeply; median lobe 0.34 times total length, 0.84 times length of lateral lobe; lateral lobe 0.41 times total length.

Female unknown.

Type Material. HOLOTYPE, male, labeled "BAHAMAS: Eleuthera, Rainbow Bay, xi-1986, J.B. Wiley, malaise (FSCA).

Paratype labeled identically to the holotype (1, FSCA).

Etymology. The species epithet "*sibateo*" is a noun in apposition and is taken from the Taino name of the island of provenance, now called Eleuthera. Sibateo means "distant rocky land" (Granberry 1991; Granberry and Vescelius 2004).

Discussion. This species represents part of the "*Aulonothroscus* sp. 2" of Turnbow and Thomas (2008). In Blanchard (1917), *A. sibateo* fails to fit the key due to the combination of larger body size, entire compound eyes, head with frontal carinae, and the prosternum with strong longitudinal carinae.

A Key to the Species of *Aulonothroscus* of The Bahamas

1. Length 2.4–2.8 mm; form elongate-ovate in dorsal aspect; pronotum with fine punctures sparsely to moderately separated in spaces between larger punctures. **2**

— Length 3.2–3.3 mm; form obovate in dorsal aspect, widest subhumerally; pronotum microreticulate between punctures. ..... ***A. sibateo* n.sp.**

2. Frontal carinae strong, approximate at midline; paramedial depressions small, distinctly delimited..... ***A. convergens* (Horn)**

— Frontal carinae fine, close to eye margin; paramedial depressions lacking distinct edges. .... ***A. inawa* n.sp.**

Acknowledgments

My thanks to Bob Turnbow and Mike Thomas for their extensive fieldwork and collections of Bahamian elateroids; to Natalia Vandenberg, Systematic Entomology Lab, Warren Steiner, Patricia Poole and Elisabeth Roberts, Department of Entomology, National Museum of Natural History for lending and curating elateroids; and to Phil Perkins, Museum of Comparative Zoology for access to collections. Warren Steiner and Dan Young are thanked for valuable review comments on the manuscript.

Literature Cited

Blackwelder, R. E. 1944. Checklist of coleopterous insects of Mexico, Central America, the West Indies, and South America. United States Natural Museum Bulletin, Part 2, 185: 189–341.

Blanchard, E. 1917. Revision of the Throscidae of North America (Coleoptera). Transactions of the American Entomological Society 43: 1–26.

Campbell, D. G. 1978. The ephemeral islands, a natural history of the Bahamas. Caribbean MacMillan Education Ltd.; London, United Kingdom. viii+151 p.

Fleutiaux, E. 1911. Revision des Trixagidae, Melasidae et Elateridae (Col.) des Antilles française. Annales de la Société entomologique de France 80: 235–264.

Fleutiaux, E. 1947. Throscidae. p. 135–138. *In*: E. Fleutiaux, C. Legros, P. Lepesme, and R. Paulian (eds.). Faune de l'Empire française. VII. Coléoptères des Antilles, vol. 1. Office de la Recherche Scientifique Coloniale; Paris. 239 p.

Granberry, J. 1991. Lucayan toponyms. Journal of the Bahamas Historical Society 13(1): 3–12.

Granberry, J., and G. S. Vescelius 2004. Languages of the pre-Columbian Antilles. The University of Alabama Press; Tuscaloosa, Alabama. xiv + 153 p.

Horn, G. H. 1885. Synopsis of the Throscidae of the United States. Transactions of the American Entomological Society 12: 198–208.

Horn, G. H. 1890. Fam. Throscidae. p. 193–209, pl. X. *In*: F.D. Godman and O. Salvin (Eds.). Biologia Centrali-Americana, Insecta, Coleoptera, vol. 3, part 1, Serricornia. R. H. Porter; London, U.K. 690 p. + 27 pl.

Johnson, P. J. 2014. *Trixagus steineri* (Coleoptera: Throscidae), a new species and first genus record from The Bahamas. Insecta Mundi 0388: 1-4.

Kirk, V. M. 1969. A list of beetles of South Carolina, Part 1 – Northern Coastal Plain. South Carolina Agricultural Experiment Station Technical Bulletin 1033. 124 p.

Leng, C. W. 1920. Catalogue of the Coleoptera of America, north of Mexico. John D. Sherman, Jr.; Mount Vernon, New York. 470 p.

Majka, C. G. 2012. The Throscidae (Coleoptera) of Atlantic Canada. Journal of the Acadian Entomological Society 7: 20-25.

MCZ Type Database 2014. https://insects.oeb.harvard.edu/mcz (accessed 12 October 2014).

Peck, S. B. 2005. A checklist of the beetles of Cuba with data on distributions and bionomics (Insecta: Coleoptera). Arthropods of Florida and Neighboring Land Areas 18: 1–241.

Peck, S. B., and M. C. Thomas 1998. A distributional checklist of the beetles (Coleoptera)of Florida. Arthropods of Florida and Neighboring Land Areas 16: 1–180.

Perez-Gelabert, D. E. 2008. Arthropods of Hispaniola (Dominican Republic and Haiti): A checklist and bibliography. Zootaxa 1831: 1–530.

Saunders, N. J. 2005. The Peoples of the Caribbean: an encyclopedia of archaeology and traditional culture. ABC-CLIO, Inc.; Santa Barbara, California. xxii + 399 p.

Schenkling, S. 1928. Throscidae, Cerophytidae, Perothopidae. Pars 101. Vol. 11, Coleopterorum Catalogus. W. Junk; Berlin, Germany. 30 p.

Thomas, M. C., R. H. Turnbow, Jr., and W. Steiner 2013. An annotated checklist of the Coleoptera (Insecta) of the Cayman Islands, West Indies. Insecta Mundi 0280: 1–56.

Turnbow, R. H., Jr., and M. C. Thomas 2008. An annotated checklist of the Coleoptera (Insecta) of the Bahamas. Insecta Mundi 0034: 1–64.

Wolcott, G. N. 1948. The Insects of Puerto Rico. The Journal of Agriculture of the University of Puerto Rico 32(1): 1–416.

Received March 7, 2015; Accepted March 16, 2015.
Review Editor Paul Skelley.